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09/493,701	01/28/2000	Adam J. Weissman	003.P001CIP	2554

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Pillbury Winthrop LLP
1600 Tysons Blvd.
McLean, VA 22102

EXAMINER

WASSUM, LUKE S

ART UNIT PAPER NUMBER

2177

DATE MAILED: 02/06/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/493,701

Applicant(s)

WEISSMAN ET AL.

Examiner

Luke S. Wassum

Art Unit

2177

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 January 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 January 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Priority

1. This application is a Continuation-in-Part of application number 09/431,760, filed 1 November 1999. The priority date of this application is 1 November 1999.

Specification

2. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

3. Applicant is reminded of the proper content of an abstract of the disclosure.

A patent abstract is a concise statement of the technical disclosure of the patent and should include that which is new in the art to which the invention pertains. If the patent is of a basic nature, the entire technical disclosure may be new in the art, and the abstract should be directed to the entire disclosure. If the patent is in the nature of an improvement in an old apparatus, process, product, or composition, the abstract should include the technical disclosure of the improvement. In certain patents, particularly those for compounds and compositions, wherein the process for making and/or the use thereof are not obvious, the abstract should set forth a process for making and/or use thereof. If the new technical disclosure involves modifications or alternatives, the abstract should mention by way of example the preferred modification or alternative.

The abstract should not refer to purported merits or speculative applications of the invention and should not compare the invention with the prior art.

Where applicable, the abstract should include the following:

Art Unit: 2177

- (1) if a machine or apparatus, its organization and operation;
- (2) if an article, its method of making;
- (3) if a chemical compound, its identity and use;
- (4) if a mixture, its ingredients;
- (5) if a process, the steps.

Extensive mechanical and design details of apparatus should not be given.

4. The abstract of the disclosure is objected to because it fails to point out in any detail the technical features that render it new in the art, and furthermore because it is less than 50 words in length. Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

6. Claims 1 and 9 are rejected under 35 U.S.C. 102(e) as being anticipated by **Hazlehurst et al.** (U.S. Patent 6,289,353).

7. Regarding claim 1, **Hazlehurst et al.** teaches a method as claimed, comprising:
 - a) determining a first semantic sub-space within a semantic space in response to an input term (see discussion of the “find_similar” function in the discussion of Query Processing, col. 20, line 60 through col. 21, line 50, and particularly col. 21, lines 14-27; see also step 352 in Figures 15A and 15B); and
 - b) displaying at least one document positioned with said first semantic sub-space if any documents are contained therein (see discussion of recommendations list 233 in Figure 16 at col. 20, line 60 through col. 21, line 50, and particularly col. 21, lines 47-50).
8. Regarding claim 9, **Hazlehurst et al.** additionally teaches a method further comprising indexing documents within said semantic space (see discussion of the index tank, col. 7, line 46 through col. 8, line 16).
9. Claims 14 and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by **Fellbaum** (“WordNet: An Electronic Lexical Database”).
10. Regarding claim 14, **Fellbaum** teaches a method as claimed, comprising:
 - a) inputting at least one term to a semantic engine (see lines 2-4 of section 4.6.1 Searching the Database, page 120);

- b) determining a first semantic subspace within a semantic space in response to an input term (see discussion of synsets in section 4.6.1 Searching the Database, page 120-122);
and
 - c) retrieving all words and meanings contained within said semantic sub-space (see section 4.6.1 Searching the Database, page 120-122).
11. Regarding claim 15, **Fellbaum** additionally teaches a method further comprising outputting said retrieved words and meanings (see section 4.6.2 Search Results, pages 122-123; see also Figure 4.4).

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Art Unit: 2177

14. Claims 2-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Hazlehurst et al.** (U.S. Patent 6,289,353) as applied to claims 1 and 9 above.

15. Regarding claims 2 and 3, **Hazlehurst et al.** teaches a method substantially as claimed.

Hazlehurst et al. does not explicitly teach a method wherein if no documents are contained in said first semantic sub-space then determining an expanded semantic sub-space by increasing the radius of the semantic distance until at least one document is found.

However, given the teaching of **Hazlehurst et al.** regarding the threshold variable D representing a semantic distance and its use in calculating which objects are considered "close" to a query, it would have been obvious to one of ordinary skill in the art at the time of the invention to expand the semantic distance to expand a query if no documents have been returned, since for any query procedure, if no results have been returned for a query, the query must be broadened in order to retrieve results. Given the use of semantic distance taught by **Hazlehurst et al.**, it would be obvious to increase the threshold variable D in order to broaden the query.

16. Furthermore, regarding claim 5, it would have been obvious to one of ordinary skill in the art at the time of the invention to broaden the query by increasing the threshold variable D until either a result is found or a particular threshold is reached, since it is desirable to retrieve results to a query, but it must be assumed that there is some value for semantic distance (the claimed threshold

Art Unit: 2177

value) above which any results retrieved would have little or no relationship to the query, and so the result would have little or no value to the user.

17. Regarding claim 4, **Hazlehurst et al.** teaches a method substantially as claimed.

Hazlehurst et al. does not explicitly teach a method wherein if no documents are contained in said first semantic sub-space then no documents are displayed.

However, **Hazlehurst et al.** does teach a method wherein the “find_similar” function is called in order to identify candidate clusters of object vectors, and only then comparing the query to the resulting set of object vectors, thus significantly reducing the number of semantic comparisons required to produce a recommendations list (see col. 21, lines 14-26).

It would have been obvious to one of ordinary skill of the art at the time of the invention, given the above recited teachings of **Hazlehurst et al.**, that if there were no candidate clusters of object vectors identified by the “find_similar” function, then there would be no entries in the resulting recommendations list, and thus no documents would be displayed, since the recommendations list results from the output of the “find_similar” function.

18. Claims 6, 7, 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Hazlehurst et al.** (U.S. Patent 6,289,353) as applied to claims 1 and 9 above, and further in view of **Lazarus et al.** (U.S. Patent 6,134,532).

Art Unit: 2177

19. Regarding claims 6 and 7, **Hazlehurst et al.** teaches a method substantially as claimed.

Hazlehurst et al. does not teach a method wherein said documents are advertisements, said advertisements being Internet banner ads.

Lazarus et al., however, teaches a method wherein said documents are advertisements, said advertisements being Internet banner ads (see discussion of banner advertisements which are retrieved based on summary content vectors, col. 4, line 55 through col. 5, line 33; see also col. 8, lines 58-67).

It would have been obvious to one of ordinary skill in the art to incorporate banner ads into a method of document retrieval based on semantic distance, since this would allow the selection of the best advertisement to present to a particular user, based on the similarity of the content vectors of the advertisements and the profile vector of the user.

20. Furthermore, regarding claims 10 and 11, **Lazarus et al.** teaches a method wherein banner ads may be sold to an advertiser by an information portal based upon a desired position within semantic space (see discussion of advertisers' need to target advertising to users of specific interests, that is, interests corresponding to a semantic space, col. 4, lines 39-54).

21. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Hazlehurst et al.** (U.S. Patent 6,289,353) as applied to claims 1 and 9 above, and further in view of **Fellbaum** ("WordNet: An Electronic Lexical Database").

22. Regarding claim 8, **Hazlehurst et al.** teaches a method substantially as claimed.

Hazlehurst et al. does not teach a method wherein said first semantic sub-space is redefined based upon further inputs of the particular meaning of said input term if said input term has more than one meaning in said semantic space.

Fellbaum, however, teaches a method wherein said first semantic sub-space is redefined based upon further inputs of the particular meaning of said input term if said input term has more than one meaning in said semantic space (see Section 12.4 Query Expansion, pages 295-301, and particularly Section 12.4.1 Expanding by Manually Selected Synsets).

It would have been obvious to one of ordinary skill in the art at the time of the invention to allow redefinition of the semantic sub-space through the selection of a particular meaning of an input term, since refining a query by selection of a particular desired meaning of a word would necessarily return query results that more precisely match that desired by the user.

23. Claims 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Hazlehurst et al.** (U.S. Patent 6,289,353) in view of **Lazarus et al.** (U.S. Patent 6,134,532) in view of **Eldering** (U.S. Patent 6,298,348).

24. Regarding claims 12 and 13, **Hazlehurst et al.** teaches a method comprising determining the semantic distance and relationship between an input term and a synset in a semantic space (see

Art Unit: 2177

discussion of Query Processing and the calculation of semantic distance, col. 20, line 60 through col. 21, line 50).

Hazlehurst et al. does not teach a method wherein the input term triggers the retrieval of an advertisement purchased for a semantic sub-space about said semantic sub-space.

Lazarus et al., however, teaches a method wherein the input term triggers the retrieval of an advertisement purchased for a semantic sub-space about said semantic sub-space (see discussion of banner advertisements which are retrieved based on summary content vectors, col. 4, line 55 through col. 5, line 33; see also col. 8, lines 58-67).

It would have been obvious to one of ordinary skill in the art to incorporate banner ads into a method of document retrieval based on semantic distance, since this would allow the selection of the best advertisement to present to a particular user, based on the similarity of the content vectors of the advertisements and the profile vector of the user.

Lazarus et al. does not teach a method wherein the price of the retrieved advertisement is based upon said determined distance and relationship and is inversely proportional to the determined semantic distance.

Eldering, however, teaches a method wherein the price of the retrieved advertisement is based upon said determined distance and relationship and is inversely proportional to the determined semantic distance (see col. 3, lines 46-56; see also col. 5, lines 36-45).

It would have been obvious to one of ordinary skill in the art at the time of the invention to calculate the price for displaying an advertisement based on the semantic distance between the ad and the user, since an advertisement that is highly applicable to a specific user can be assumed to be more valuable than one that is not very applicable, and so would be worth more to the advertiser.

Conclusion

25. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Faisal (U.S. Patent 6,314,419) teaches an information retrieval system that generates query feedback terminology for an input query based on a corpus of documents and the input query.

Lawrence et al. (U.S. Patent 6,289,342) teaches an autonomous citation indexing system that parses citations from papers and identifies citations to the same index that may differ in syntax.

Davis et al. (U.S. Patent 6,269,361) teaches a system for enabling information providers to influence a position for a search listing within a search result list generated by an Internet search engine.

Basche (U.S. Patent 6,119,164) teaches a workstation that records profile information derived from data representing operator choices and sends that profile information to a server so that customized information can be sent to a people and organizations most likely to be interested in the information content.

Yu (U.S. Patent 6,067,552) teaches a means for comparing a set of index terms specified by a user with sets of document index terms, and receiving a list of documents ranked in order of relevancy with respect to the user.

Art Unit: 2177

Branden-Harder et al. (U.S. Patent 5,933,822) teaches an apparatus that utilizes natural language processing in a document retrieval system.

Kirsch et al. (U.S. Patent 5,845,278) teaches a method of selecting a subset of documents.

Light (U.S. Patent 5,778,363) teaches a method for determining the relevance of a document according to an externally defined topic profile.

Barbara et al. (U.S. Patent 5,499,360) teaches a method of searching a database wherein a query specifies two attributes and a maximum distance.

Deerwester et al. (U.S. Patent 4,839,853) teaches a methodology for retrieving textual data objects that are represented in a semantic domain.

Art Unit: 2177

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Luke S. Wassum whose telephone number is 703-305-5706. The examiner can normally be reached on Monday-Friday 8:30-5:30, alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John E. Breene can be reached on 703-305-9790. The fax phone numbers for the organization where this application or proceeding is assigned are 703-746-7239 for regular communications and 703-746-7238 for After Final communications.

In addition, INFORMAL or DRAFT communications may be faxed directly to the examiner at 703-746-5658.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.



Luke S. Wassum
Art Unit 2177

lsw
January 31, 2002



JEAN R. HOMERE
PRIMARY EXAMINER